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S. 757

To create a national set of effective voluntary national expectations for mathematics and science education in kindergarten through grade 12, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 5, 2007

Mrs. CLINTON introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

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A BILL

To create a national set of effective voluntary national expectations for mathematics and science education in kindergarten through grade 12, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''National Mathematics and Science Consistency Act''.

SEC. 2. FINDINGS.

Congress finds the following:

(1) The United States has fallen behind other industrialized countries in terms of competing in a

global economy. This deterioration is due in large part to the diminishing number of well-trained people in the fields of mathematics, science, and technology, as well as the decrease in scientific innovations generated from the United States in recent years.

(2) Not only did the United States produce fewer graduates in mathematics, science, and engineering in 2002 than it did in 1985, but the United States is also generating far fewer college graduates in those fields than other countries. In China, 59 percent of undergraduates receive degrees in science and engineering and in Japan, 66 percent receive such degrees, but in the United States, only 32 percent of undergraduates receive degrees in science and engineering.

(3) United States students are scoring far behind students in other countries on international mathematics and science assessments. A recent Trends in International Mathematics and Science Study (TIMSS), the largest and most comprehensive comparative international study of education, found that 12th graders in the United States ranked 21st out of 40 industrialized countries on general knowledge in mathematics and science. Furthermore, the

Programme for International Student Assessment (PISA), an organization that compiles reports on the reading and mathematics skills of 15-year-olds, found that the United States ranked 28th out of 40 nations surveyed in mathematics literacy.

(4) In the United States, each State has its own set of standards and curriculum for mathematics and science education in kindergarten through grade 12, with its own definition of proficiency for these standards. When each State's definition of proficiency is compared to a national model, less than 40 percent of the students in grade 4, and only 17 percent of the students in grade 12, reach the national proficiency level in mathematics. In addition, approximately ⅓ of the students in grades 4 and 8, and nearly ½ of the students in grade 12, do not reach the basic level in science, according to the recent National Assessment of Educational Progress.

(5) In its report, Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future, the National Academy of Sciences recommends that the Department of Education should collect ''effective K–12 materials that would be available free of charge as a voluntary na-

tional curriculum that would provide an effective standard for K–12 teachers''. The National Academy of Sciences advocates for the creation of world-class national benchmarks and a national curriculum in order to ensure students are receiving the skills needed to successfully compete in a global economy.

SEC. 3. DEVELOP VOLUNTARY NATIONAL EXPECTATIONS FOR MATHEMATICS AND SCIENCE EDUCATION IN KINDERGARTEN THROUGH GRADE 12.

(a) AGREEMENT WITH THE NATIONAL ACADEMY OF SCIENCE.—The Secretary of Education shall enter into a contract with the National Academy of Sciences of the National Academies for the National Academy of Sciences to convene and oversee a panel, subject to the requirements of this section, that shall produce voluntary national expectations for mathematics and science education, accompanied by promising practices in teaching mathematics and science and assessment items for each expectation, for kindergarten through grade 12, in accordance with subsection (c).

(b) MEMBERS OF PANEL.—

(1) MEMBER QUALIFICATIONS.—Each member of the panel described in subsection (a) shall have substantial knowledge or experience relating to—

(A) education, mathematics, or science policy or programs; or

(B) mathematics or science curricula educational content development.

(2) COMPOSITION OF PANEL.—In selecting the members of the panel described in subsection (a), the National Academy of Sciences shall ensure that—

(A) each member has the qualifications required under paragraph (1);

(B) the panel is broadly representative of scientists, practitioners, educators, parents, and representatives from entities with expertise in education, mathematics, and science;

(C) a majority of the members of the panel are parents directly involved in the kindergarten through grade 12 education process; and

(D) the members of the panel who are educators and parents proportionately represent—

(i) the different demographic areas of the United States, including urban, suburban, and rural schools; and

(ii) public and private schools.

(c) DUTIES OF PANEL.—The panel described in subsection (a) shall—

(1) identify the core ideas in mathematics and science common to all States;

(2) develop a minimum comprehensive set of voluntary national expectations for mathematics and science education, based on the core ideas in mathematics and science common to all States, that are taken, or adapted, from—

(A) the State mathematics and science standards, as of the date of enactment of this Act, that are found to be effective; or

(B)(i) the most recent National Science Education Standards developed by the National Science Teacher Association; and

(ii) the most recent Standards for School Mathematics developed by the National Council of Teachers of Mathematics;

(3) develop promising practices in teaching mathematics and science by—

(A) identifying proven, effective, kindergarten through grade 12 mathematics and science teaching materials that exist as of the date of enactment of this Act; and

(B) identifying the need for new mathematics and science teaching materials;

(4) develop sample assessment questions based on each voluntary national expectation, for teachers to use throughout the school year to guide instruction;

(5) establish a mechanism for the distribution of the voluntary national expectations, promising practices, sample assessment questions, and other information, identified or developed under this subsection; and

(6) develop and coordinate professional development criteria that would prepare teachers to incorporate the voluntary national expectations into the teachers' classroom instruction.

(d) DISSEMINATION.—The Secretary of Education shall—

(1) disseminate information, in accordance with the recommendations of the panel described in subsection (a), to entities such as State educational agencies; and

(2) otherwise make the materials collected by the panel available and accessible to local educational agencies and schools.

(e) PERSONNEL MATTERS.—

(1) COMPENSATION OF MEMBERS.—The contract described in subsection (a) shall provide that

each member of the panel who is not an officer or employee of the Federal Government shall be compensated at a rate equal to the daily equivalent of the annual rate of basic pay prescribed for level IV of the Executive Schedule under section 5315 of title 5, United States Code, for each day (including travel time) during which such member is engaged in the performance of the duties of the panel. All members of the panel who are officers or employees of the United States shall serve without compensation in addition to that received for their services as officers or employees of the United States.

(2) TRAVEL EXPENSES.—The contract described in subsection (a) shall provide that members of the panel shall be allowed travel expenses, including per diem in lieu of subsistence, at rates authorized for employees of agencies under subchapter I of chapter 57 of title 5, United States Code, while away from their homes or regular places of business in the performance of services for the panel.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section such sums as may be necessary for each of the fiscal years 2008 through 2012.

SEC. 4. GRANTS TO STATE EDUCATIONAL AGENCIES.

(a) IN GENERAL.—From amounts appropriated under subsection (e) for a fiscal year, the Secretary of Education shall award grants, in an amount determined under subsection (b), to State educational agencies to enable the State educational agencies to carry out all of the following:

(1) Contract with entities that publish educational materials, in order to develop instructional materials based on the promising practices in teaching mathematics and science developed under section 3(c)(3) that effectively teach the voluntary national expectations for mathematics and science education developed under section 3(c)(2).

(2) Ensure that the State educational agency has the infrastructure and technical assistance necessary to provide all instructional materials online and free of charge to teachers and school faculty and staff.

(3) Train mathematics and science teachers in kindergarten through grade 12—

(A) to effectively use instructional materials to teach the voluntary national expectations for mathematics and science education developed under section 3(c)(2); and

(B) to use the assessment questions developed under section 3(c)(5) to steer instruction.

(b) FORMULA FOR GRANTS.—The Secretary of Education shall award a grant for a fiscal year to each State educational agency that submits a complete application under subsection (c) in an amount that bears the same relation to the amount appropriated for this section for such fiscal year, as the number of students served by the State educational agency for such fiscal year bears to the total number of students served by all State educational agencies that submit complete applications for such fiscal year.

(c) APPLICATION.—A State educational agency desiring a grant under this section shall submit an application to the Secretary of Education at such time, in such manner, and containing such information as the Secretary may require. The application shall include a description of the activities that will be carried out through a grant under this section.

(d) REPORT.—Not later than 60 days after the last day of the grant period, a State educational agency receiving a grant under this section shall prepare and submit a report to the Secretary of Education describing the results of the grant.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section a total of $100,000,000 for fiscal years 2008 through 2012.

SEC. 5. REPORT.

Not later than 2 years after the date of enactment of this Act, and annually thereafter, the Secretary of Education shall—

(1) study the effects of the voluntary national expectations for mathematics and science education, and the promising practices in teaching mathematics and science, developed under section 3 on student achievement on the National Assessment of Educational Progress, the Trends in International Mathematics and Science Study, and the Programme for International Student Assessment, for the most recent year available, as compared to the effects of State standards and curricula on student achievement on such assessments; and

(2) shall prepare and submit a report to Congress on the Secretary's findings.

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